

02-OSR-0072



U.S. Department of Energy
Office of River Protection
Contract Management Division
Mr. Michael K. Barrett
Contracting Officer
P.O. Box 450, MSIN H6-60
Richland, Washington 99352

CCN: 034358

JUN 17 2002

Dear Mr. Barrett:

**CONTRACT NO. DE-AC27-01RV14136 – RESPONSE TO U.S. DEPARTMENT OF
ENERGY, OFFICE OF SAFETY REGULATION - INSPECTION REPORT IR-02-004 –
ON-LOCATION INSPECTION REPORT FOR THE PERIOD FEBRUARY 25
THROUGH APRIL 11, 2002**

Reference: CCN 033104, Letter, R. C. Barr, OSR, to R. F. Naventi, BNI, "Inspection Report
IR-02-004 – On-Location Inspection Report for the Period February 25 Through
April 11, 2002", 02-OSR-0174, dated May 3, 2002

The purpose of this letter is to provide Bechtel National, Inc.'s (BNI) response to Finding
IR-02-004-03-FIN.

During the period February 25 through April 11, 2002, the U.S. Department of Energy (DOE),
Office of Safety Regulation (OSR) performed the first of OSR's continuous on-location
inspection coverage of BNI construction activities. During this inspection period, BNI
construction was limited to the work authorized under the DOE Office of River Protection
Limited Construction Authorization Agreement.

The inspection identified a single Finding resulting from BNI's failure to require coating of
firewater system bolted accessories in procedures or technical specifications or to coat the
accessories prior to burying the piping as required by BNI's Safety Requirements Document.
Failure to coat buried bolting accessories is a concern because of potential corrosion during the
life of the Hanford Tank Waste Treatment and Immobilization Plant.

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**RESPONSE TO FINDING
IR-02-004-03-FIN**

Summary of Finding

On March 14, 2002, during an inspection of backfilling activities on the firewater piping system in Area 31, at the Hanford Tank Waste Treatment and Immobilization Plant (WTP) construction site, the U.S. Department of Energy, Office of Safety Regulation (OSR) identified the following:

National Fire Protection Association (NFPA) 801-95, paragraph 4-2.1.3, states in part, "The fire protection water supply system shall be arranged in conformance with NFPA 24, *Standard for the Installation of Private Mains and Their Appurtenances*." NFPA 24-95, paragraph 8-5.2, states, "All bolted joint accessories shall be cleaned and thoroughly coated with asphalt or other corrosion-retarding material after installation".

OSR review of engineering specification 24590-BOF-3PS-PZ41-T0001, *Underground Fire Protection Piping Mains*, Revision 1, dated September 19, 2001, identified that it did not contain a requirement to coat bolted joint accessories. Additionally, BNI personnel had completed backfilling portions of the fire protection piping in Area 31 without the bolted joint accessories being coated.

The failure to specify the requirement for coating of bolted accessories in procedures or engineering specifications or implement the requirement to coat the accessories is considered a Finding of nonconformance with the requirements of Safety Requirements Document, Safety Criteria 5.4-17.

1) Bechtel National, Inc. (BNI) Response

BNI agrees with the finding that the requirement for coating of the bolted accessories was not implemented.

2) Reason for the Finding

Engineering Specification 24590-BOF-3PS-PZ41-T0001, Revision 1 stated that the design and installation of the underground fire water main was to be done in accordance with NFPA 24 which requires coating of bolted connections. However, the specification did not specifically state that the bolted connections should be coated. Construction Field Engineering requested clarification on this point from the Fire Protection Engineer, based on comparison to other Engineering Specifications which specifically addressed coating of bolted connections.

A meeting between Field Engineering and Fire Protection Engineering personnel was held prior to the work being performed in the field. Field Engineering was given verbal direction at that meeting not to coat the bolted connections. That decision was based on the Fire Protection Engineer's knowledge of soil conditions at the site and research that he had read indicating increased corrosion to bolted connections could occur if holidays (voids) in the coating exists.

3) Corrective steps that have been taken and the results achieved

BNI issued Corrective Action Report (CAR) 24590-WTP-CAR-QA-02-058 on March 20, 2002. The remedial action resulting from the CAR was the issuance of a Field Change Request (FCR)

24590-WTP-FCR-P-02-021 which was issued on March 21, 2002. The FCR disposition resulted in a revision to the engineering specification 24590-BOF-3PS-PZ41-T0001, to add the following:

"After installation, rods, nuts, bolts, washers, clamps, and other restraining devices, except thrust blocks, shall be cleaned and thoroughly coated with a bituminous or other acceptable corrosion-retarding material. The use of light weight concrete, controlled density backfill, is acceptable as a corrosion retarding material."

Additionally, BNI issued a Nonconformance Report (NCR) on April 15, 2002 to correct the nonconforming condition of non-coated bolted connections which had already been covered by backfill. Field Engineering recommended a disposition of "Rework", as defined by 24590-WTP-FCR-P-02-021, on the coating of bolted connections on the Fire Protection lines. Coating will be applied to the bolted connections and the rework will be accomplished as BNI continues parallel work activities back into the area where the non-coated bolted connections were buried.

4) The corrective steps that will be taken to avoid further Findings

In March, BNI's Engineering, Construction, Quality Control and Quality Assurance (QA) began conducting detailed reviews of a sample of engineering specifications used by Construction, for determination of completeness of content (codes and standards) and to identify potential problems with implementation.

The changes resulting from this review consisted primarily of eliminating or clarifying guidance requirements and refinement of wording to ensure clear understanding of the expectations. Revisions identified for the specifications reviewed in detail are in process and will be coordinated with Construction. Engineering will provide guidance from the lessons learned to discipline engineers for use in future identification of applicable codes and standards in the production of future specifications. This action will be completed by July 1, 2002.

Construction will provide guidance to the field engineering staff to not act on verbal direction from engineering that is contrary to the requirements of the specifications or drawings. This will be completed by July 1, 2002.

Engineering will provide training, to personnel responsible for developing specifications, checking, and approving, concerning the identification of documents that are considered to be part of the Authorization Basis documentation. This will be completed by August 1, 2002.

5) The date when full compliance with the applicable requirements will be achieved.

On April 22, 2002, BNI QA verified that the engineering specification, 24590-BOF-3PS-PZ41-T0001, Rev 2, Section 5.9 states "Buried bolted joint components shall be coated." and the CAR was closed on April 24, 2002.

Rework as required by the NCR is tentatively scheduled for completion by the end of June 2002.